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## Notes on eggs of the Hook-billed Kite *Chondrohierax uncinatus*, including two overlooked nesting records

by Lloyd F. Kiff

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During routine study of the Western Foundation of Vertebrate Zoology (WFVZ) egg collection, I discovered 2 clutches of Hook-billed Kite *Chondrohierax uncinatus* eggs, misidentified by the original collector; and since there are few published nesting records for this species and even fewer descriptions of its eggs, it seems worthwhile recording them.

The eggs were collected by or (probably) for the professional collector, Frank B. Armstrong, in the vicinity of Ciudad Victoria, Tamaulipas (23° 44'N, 99° 08'W), in Mexico on 14 May 1908 (WFVZ no. 120, 613) and 2 May 1910 (WFVZ no. 16,292). The former set came to the WFVZ as a part of the Philadelphia Academy of Natural Sciences collection, whereas the latter set was most recently in the Col. L. R. Wolfe collection.

Both sets were identified by Armstrong as eggs of the Everglade (Snail) Kite *Rostrhamus sociabilis*, a species superficially similar to the Hook-billed Kite in appearance and diet. My reasons for thinking that the eggs are in fact those of the Hook-billed Kite are as follows: (1) there is no evidence that the Snail Kite has ever nested as far north in Mexico as central Tamaulipas (Friedmann *et al.* 1950, Edwards 1972, Peterson & Chalif 1973), but the Hook-billed Kite is at least locally common there (Smith, in press); (2) both Armstrong's clutches were in nests composed of "twigs, roots and bark", 20 and 22 feet off the ground in open woods, similar to the nesting situations

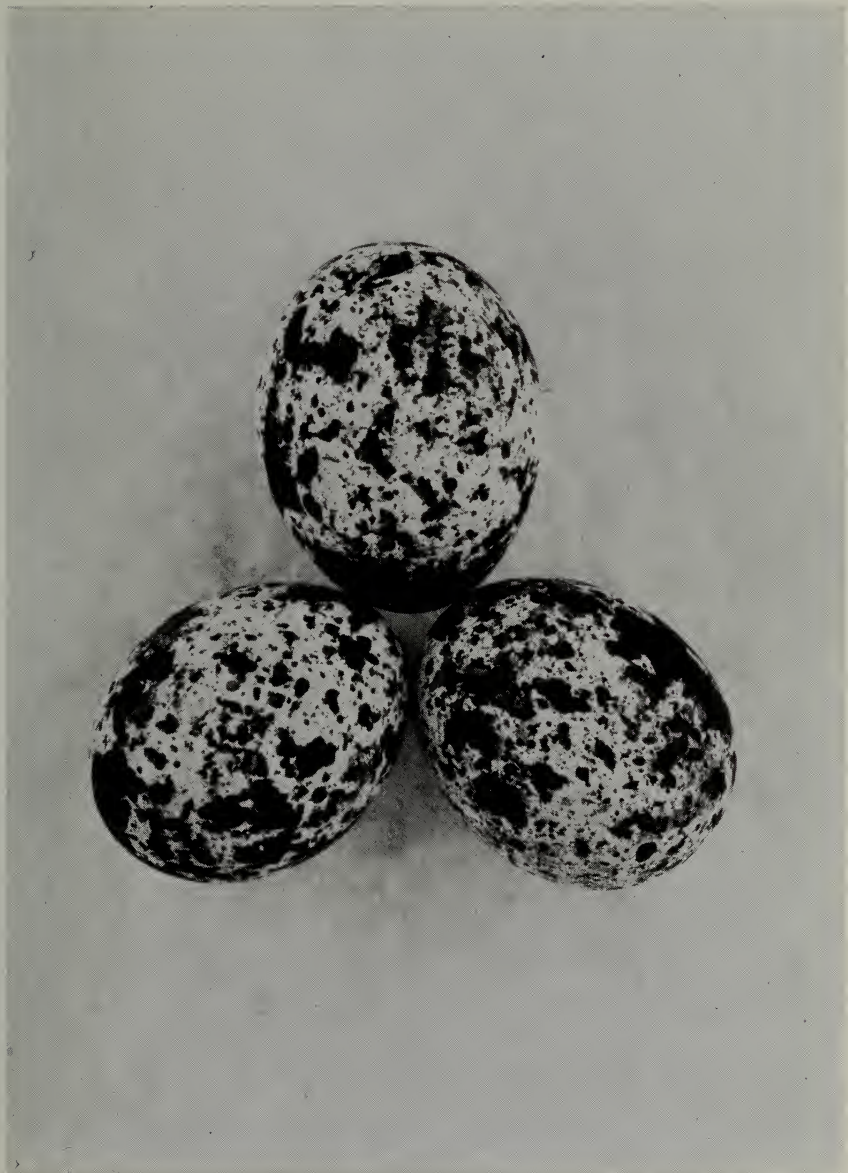


Fig. 1. A Hook-billed Kite *Cbondrobierax uncinatus* egg from Oaxaca, Mexico (top) and two probable Hook-billed Kite eggs from Tamaulipas, Mexico (bottom).

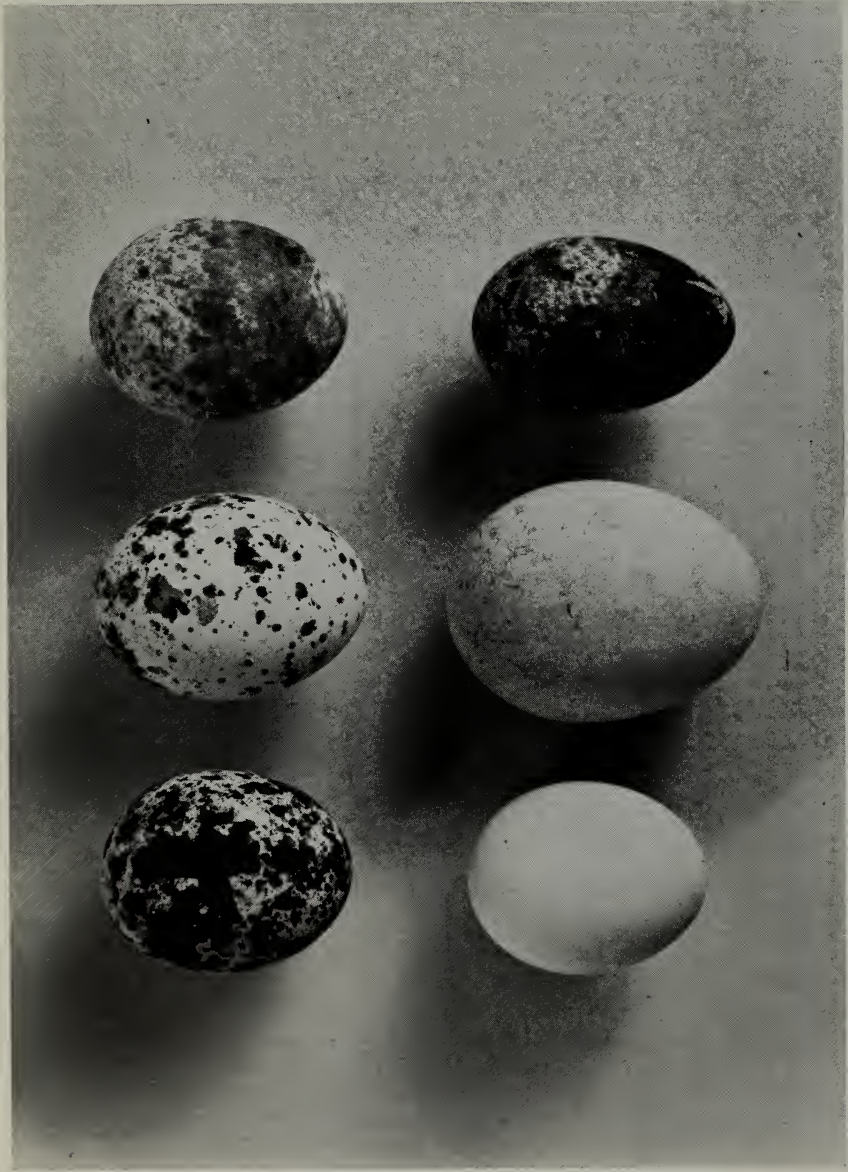


Fig. 2. Eggs of American kites. Top, 1 to 1: *Chondrohierax uncinatus*, *Elanoides forficatus*, *Rostrhamus sociabilis*. Bottom, 1 to 1: *Ictinia mississippiensis*, *Leptodon cayanensis*, *Elanus leucurus*.



described for Hook-billed Kites by Haverschmidt (1964, 1968), Fleetwood & Hamilton (1967), Delnicki (1978), Smith (in press) and Rowley (in press), but quite different from the details of nest heights, materials and habitat given for the Snail Kite by Bent (1937) and Brown & Amadon (1968); (3) Armstrong's eggs are virtually identical to unquestioned Hook-billed Kite eggs in the WFVZ collection, but differ from those in a large series of Snail Kite eggs.

The eggs of WFVZ no. 120,613 measure 44.0 x 35.4 and 42.5 x 35.3 mm, with empty dry shell weights of 2.18 and 2.16 g, respectively. Equivalent measurements of WFVZ no. 16,292 are 46.9 x 37.6 and 44.3 x 36.2 mm, with empty dry shell weights of 2.85 and 2.21 g, respectively. These measurements agree closely with those of a Hook-billed Kite egg (WFVZ no. 21,331) collected near Tapanatepec, Oaxaca, Mexico (16° 20'N, 94° 10'W) by Rowley (in press); that egg measures 47.4 x 36.6 mm, with an empty dry shell weight of 2.44 g. The only other known museum clutch of Hook-billed Kite eggs was collected in Surinam and the eggs measured 43.4 x 36.9 and 46.6 x 37.3 mm (Haverschmidt 1968).

One egg from each of Armstrong's 2 clutches is shown in the Plate accompanying, together with the Hook-billed Kite egg from Oaxaca mentioned above. All are very similar in colour, being dull white with heavy spots and blotches of dark chocolate brown. They are also identical in colour to eggshell fragments taken from 3 other Hook-billed Kite nests at Tamaulipas in 1980 by T. Smith and to a second egg taken by Rowley at Oaxaca that was broken when found.

Snail Kite eggs are similar in size (65 eggs of the Florida race, *plumbeus*, averaged 44.2 x 36.3 mm (Bent 1937); 12 eggs of the Mexican race, *major*, in the WFVZ collection average 44.2 x 36.0 mm), but differ in both colour and shape from Hook-billed Kite eggs (see Plate). Snail Kite eggs are marked to varying degrees with spots and splotches of light, buff, and medium brown, but none of the specimens in the WFVZ series of 56 clutches bears the dense chocolate brown markings that are evidently typical of Hook-billed Kite eggs. In addition, Snail Kite eggs in the WFVZ series range in shape from subelliptical to short subelliptical (all shape designations follow Preston in Palmer 1962: 13), whereas all the presumed Hook-billed Kite eggs are nearly elliptical in shape.

Among American kites, the eggs of the Swallow-tailed Kite *Elanoides forficatus* show most similarity to those of the Hook-billed Kite in size (a Florida sample of 50 averaged 46.7 x 37.4 mm - Bent 1937), shape (elliptical to short subelliptical), and shade of brown markings, although they are rarely as heavily marked (see Plate). It is, however, unlikely that Armstrong or his collectors would have misidentified that striking species. Furthermore, the Swallow-tailed Kite is not known ever to have nested in northern Mexico, even during the era when it occurred as a breeding species in Texas and portions of the United States Midwest (Friedmann *et al.* 1950).

As suggested by Haverschmidt (1964), the 2 eggs attributed to the Hook-billed Kite by Schönwetter (1961) are probably mis-identified, since their measurements, averaging 53.6 x 40.5 mm, are so much greater than authentic examples. In addition, an accompanying illustration of one of the eggs (Schönwetter: Plate 6, fig. 8) shows that it is short oval in shape and white with a few reddish-brown spots, mostly at the large end. In these particulars,

Schönwetter's purported Hook-billed Kite eggs closely resemble those of the larger Grey-headed Kite *Leptodon cayanensis* described by him (op. cit.) and by Brown & Amadon (1968), as well as 2 sets of eggs of the latter species in the WFVZ collection. The WFVZ eggs are white with a few medium brown and purplish brown scrawls and spots, mostly on the larger ends (see Plate). Their shapes range from short oval to long oval, and they measure 54.3 x 40.6 and 53.7 x 43.7 mm with empty dry shell weights of 4.13 and 4.43 g, respectively.

The WFVZ Grey-headed Kite clutches were taken in Trinidad for G. D. Smooker, and those mentioned by Schönwetter (1961) and Brown & Amadon (1968) were presumably acquired by the same collector. Two additional clutches collected in Trinidad for Smooker and identified by him as Hook-billed Kite eggs are also in the WFVZ collection, and another such clutch is in the collection of the Zoological Museum of the University of Helsinki (no. 9603). However, all 3 are probably eggs of the Grey-headed Kite, since they are similar to those of the WFVZ *Leptodon* clutches in shape, colour, and size.

Although Smooker's Trinidad kite sets were collected between 1929 and 1933, they were not mentioned in the long paper that he co-authored on the nesting habits of the birds of Trinidad and Tobago (Belcher & Smooker 1934-1937). When asked about this years later, Smooker replied (letter to Col. L. R. Wolfe, 3 August 1953) that "The eggs of *Chondrohierax uncinatus* and *Odontriorchis palliatus* (= *Leptodon cayanensis*) were not described in the paper you mention because at that time I was not quite certain of their identity and therefore thought it best to omit them".

Finally, there appears to be no basis for the comment by Brown & Amadon (1968) that the eggs of the Hook-billed Kite resemble those of *Elanus leucurus*, since they differ from all members of the genus *Elanus* in all fundamental details, including size, shape, and colour of markings.

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## Breeding and other observations on the Slaty Egret *Egretta vinaceigula*

by R. J. Dowsett

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The specific status of the Slaty Egret *Egretta vinaceigula* has only recently been established with certainty, and many aspects of its biology are quite unknown. In particular, there has been no information on its breeding behaviour (Hancock & Elliott 1978), with no nest hitherto observed, although Benson, Brooke & Irwin (1971) mention sighting an unapproachable colony on the Chobe River in northern Botswana in May 1971. Thus one of my aims during a visit to the swamps of the Okavango region of Botswana in 1975 was to search for nests.

### BREEDING IN BOTSWANA

I spent 3 days in June visiting, by boat, parts of the Moremi Wildlife Reserve, in company with P. A. Smith and J. Steen. On 15 June, Smith took me to a mixed heronry on Xakanaxa *lediba* (=lagoon), at 19° 11'S, 23° 23'E. There was little breeding activity, but we did find an occupied nest of the Slaty Egret. As our boat approached, one of the adults would slip off the nest, creep through the thicket of wild fig, *Ficus verruculosa*, which the heronry occupied, and then fly off. A second adult was sometimes nearby. There were 3 pulli in the nest; 2 were rather larger than the third and they would usually climb off into the thicket before we were near.

Two others, apparently a pair, were often seen on the other side of the colony, but we did not find their nest. A further 8 Slaty Egrets were present in the *Ficus* at dusk on 15 June, and elsewhere in Moremi we saw 4 single birds loosely associating together at a pool. During the 3 days I spent in the Okavango swamps I saw no Black Egrets *E. ardesiaca*.

Accounts of the Xakanaxa heronry have been published by Berry (1968), Child (1972), Fraser (1971) and Steyn (1970). (The spelling of this locality name has varied, but P. A. Smith tells me that the official vernacular spelling is as I have it here.) These authors mention several species of water birds breeding there (some of which I also found in June), but no Slaty Egrets, and I am unaware of any observations of this species since my own. Their visits to the heronry were later in the year than mine, which may explain why they failed to find Slaty Egrets if they usually breed about May and June.

### DESCRIPTION OF NEST AND NESTLING

The extensive thicket of *Ficus verruculosa* in which the Xakanaxa heronry